CLAIMS

1. A self-locking drill chuck comprising a body, a nut, a plurality of jaws, a front sleeve, a rear sleeve, a nut jacket, and a rolling member, wherein the plurality of jaws are respectively installed in angled bores uniformly distributed around the body, the threads of the nut and the threads of the jaws installed in the angled bores of the body constitute and a thread driving mechanism, and the front sleeve is fixedly connected to the body, wherein, the self-locking drill chuck further comprises:

a ratchet wheel fixedly mounted at a rear portion of the chuck body;

a disk spring arranged between the rolling member and a load carrying shoulder of the chuck body; and

a plurality of positioning key slots and annular connecting groove arranged in a front end of the chuck body;

wherein a driving groove and a plurality of keys are defined at a rear end of the nut jacket and a locking elastic element and a driving elastic element are respectively mounted on the plurality of keys; a control ring is fixedly mounted on the rear sleeve and formed with a plurality of driving keys and a cam face of a plurality of bulged portions and curved teeth; and the plurality of positioning keys and connecting clips are formed in an internal surface of the front sleeve.

2. The self-locking drill chuck as recited in Claim 1, wherein the locking elastic element and the driving elastic element are integrated with the rear end of the nut jacket.

3. The self-locking drill chuck as recited in Claim 1, wherein the control ring is integrated with the rear sleeve.

4. The self-locking drill chuck as recited in Claim 1, wherein a minimum gap between the disk spring and the load carrying shoulder of the body is determined according to the axial deformation of the disk spring under the axial pressure which is generated by 50 to 95 percent of the designed maximum gripping force of the self-locking drill chuck.